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C-O-N-F-I-D-E-N-T-I-A-L

COUNTRY: UNIDENTIFIED 4 MAY 1966
 SUBJECT: UNIDENTIFIED 4 MAY 1966
 Exploitation of Metallic Fragment
 from Unidentified Flying Object
 EXPLOITATION OF METALLIC FRAGMENT
 FROM UNIDENTIFIED FLYING OBJECT

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On file in CIA Library is an exploitation report on a metallic fragment approximately 2" x 2" x 1", recovered near Kerekene, Republic of the Congo. The fragment was recovered by ground search after a UFO fell to earth in the area. The report concludes that the fragment was originally part of an electrical component and was constructed of 0.010-inch thick silicon-steel laminate.

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(a) Approved for Release

2/12/2010

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EXPLORATORY REPORT

OF FRAGMENT, METAL, RECOVERED IN THE UPLANDS OF THE CONGO,
GLOBALLY BELIEVED TO BE AN IDENTIFIED METAL OBJECT
(COUNTRY UNIDENTIFIED) (U)

MCN-25500

SECTION I. (C) Purpose (U)

1. (C) The purpose of this report is to present the results of the exploitation of a metallic fragment recovered near the town of Kereka in the Republic of the Congo. Recovery was the result of a ground-level search which was conducted after an unidentified flying object exploded and fell to earth in the area. The sighting and recovery took place sometime between 10 and 15 October 1963. Other than a reported east-to-west direction of flight for the UFO, specific observation and recovery details are lacking.

SECTION II. (C) Description (U)

2. (C) Details concerning the exact location and characteristics of impact are unknown. However, the appearance of the fragment indicated exposure to high temperatures prior to impact (burnt). The impact of the specimen had little or no effect on its final condition or appearance. The fragment weighed 14.11g. and an indefinite density of approximately iron and measured 2.25 x 1.75 x 1.0 inches. The top and side views of the specimen were rounded and appeared to have been shaped by heating and melting. This is illustrated in Figures 1 and 2. The hot shaped groove, visible in Figure 1, is the outline of an insert of plastic that differed markedly from the rest of the specimen. Figure 3 shows the side exposing the end shown in Figure 1.

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and was composed of six machined or formed "T" shaped fins extending along the major axis of the fragment.

SECTION III. (C) Composition

3. (C) The fragment was originally part of an electrical component and could be identified as a motor, motor, generator armature, or associated electrical regulation device.

4. (C) The fragment was constructed of .10-inch thick silicon steel laminate stacked on a central mild steel core or shaft.

5. (C) Materials, processes, dimensions, etc., as such, prevent determination of exact origin (country).

6. (C) Surface appearance and microstructure of the specimen indicates exposure to temperatures in excess of 2500° F.

SECTION IV. (C) Evaluation

7. (C) The recovered fragment had a density of 4.1, and had a density closely approximating that of copper. The surface of the metal on heavy oxide was dull and black. The temperatures in excess of 2500° F. while there are no indications of impact, the fractured metal, as shown in Figures 4 and 7, would substantiate the conclusion that the item was moving at a high velocity when it was broken.

8. (C) Fabrication of the item was accomplished utilizing more or less standard procedures for fabricating electric motor armatures.

Armature laminates were stamped (punched) from approximately .012-inch sheet steel, copperplated, and assembled on a mild steel shaft approximately .433 inches in diameter. Following assembly, the laminates were joined by soldering or diffusion-bonding of the copper-

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placing. This can be accomplished by tightly compacting the laminate assembly and heating in a furnace. Temperature required for bonding of the copper depends upon the degree compact on or pressure; the higher pressures requiring proportionately lower temperatures.

9. (C) A cross-section (arrowed to) of a stack of the specimen is shown in Figure 5. The light-colored, irregular lines are the edges of individual laminates, caused by cutting at a slight angle so, instead of parallel to, the laminates. Note that the inside fins or penals are "T" shaped. This shape is used to keep the bonding wire in place and is found on high RPM motors. The melted condition of some of the "T's" is indicative of the high heating conditions experienced. The outer surface of the armature shaft is serrated to prevent axial slippage of the laminates.

10. (C) The lamination or stacking of individual laminates is clearly illustrated in Figure 6. The spattered laminae on the fin at the top of the photograph is due to the melting and flowing of the copper plating during the high temperature heating of the specimen. Some of the copper has been removed by the fin at the bottom of the photograph. A further explanation of this area is shown in Figures 7 and 8.

11. (C) Another result of laminating was the primary grain size of the steel laminates. Micrographs of the microstructure of the laminates shown in Figures 9 and 10 illustrate grain sizes that are comparable to Figure 2 of Annex C.

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intense heat and then cooled at a comparatively slow rate.

12. (C) The light material between the laminations in Figure 9 is plated copper that melted and flowed between the laminations when the entire specimen was hot. A photomicrograph of this is shown in Figure 11.

13. (C) Analysis of the base disclosed the following:

Element	Percent Present (Estimated)
Carbon	0.10
Manganese	0.50
Silicon	0.50
Nickel	less than 0.10
Chromium	0.87

Molybdenum less than 0.01

14. (C) Chemical composition of the steel laminations was as follows:

Element	Percent Present (Estimated)
Manganese	2.5
Silicon	(2 : 3)
Nickel	less than 0.10
Chromium	0.87

Molybdenum less than 0.01

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TMEDIO ECUADOR

Figure 1. Top View of the 263-681

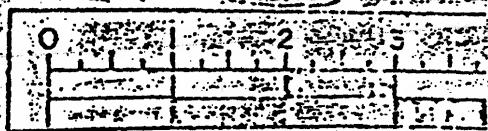


Figure 2. Side View of the 263-681

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Figure 3 (Opposite View of Fig. 1a)

Figure 4 (Opposite View of Fig. 1b)

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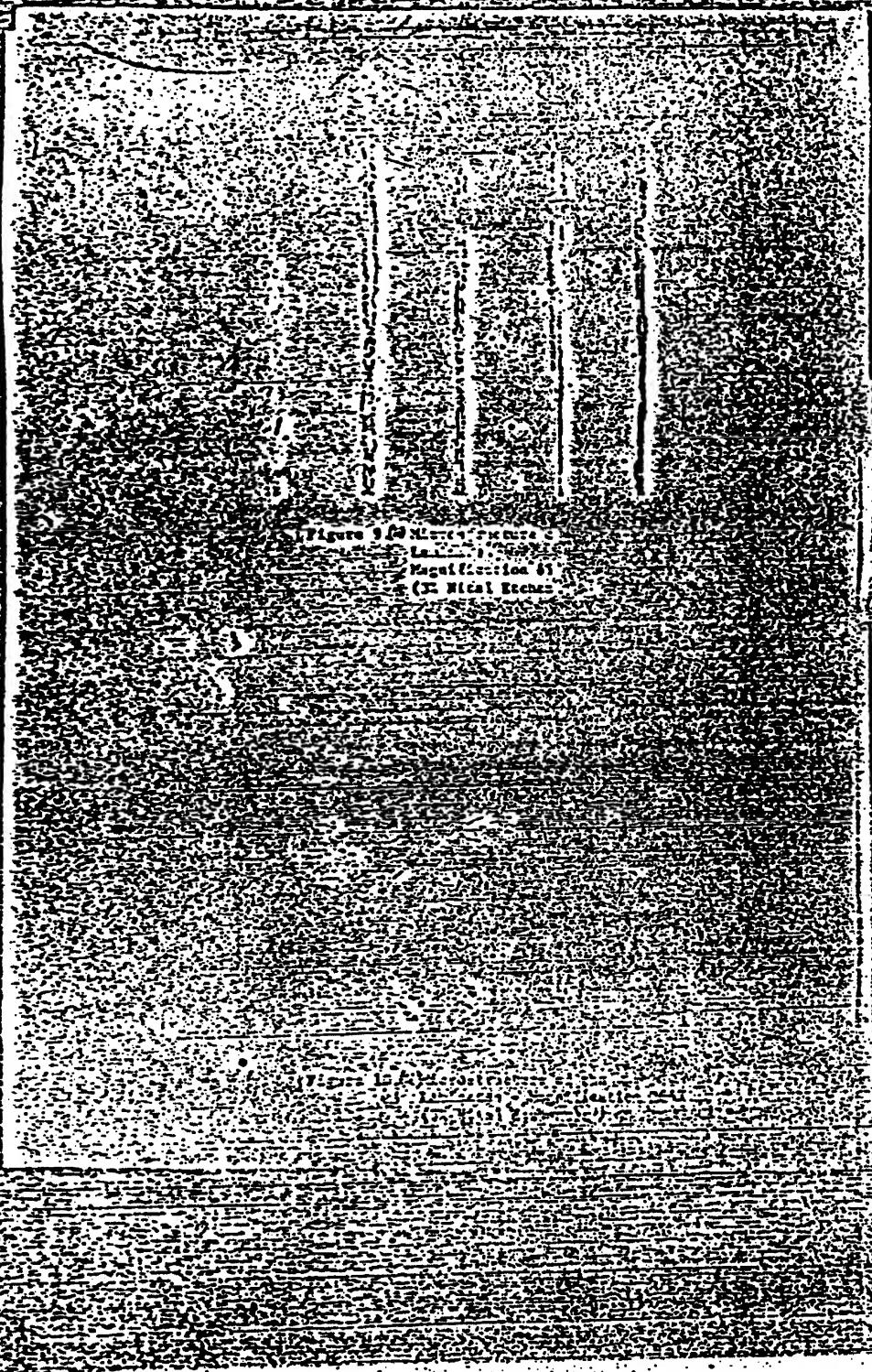
Figure 3 Micrograph (Front View
Length of the Specimen)
Magnification 22.40

TOP OF ORIGINAL

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Figure 7. Micrograph Cross-Section of
Laminated Area
Magnification: 750 X

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Figure 11.31 Photomicrograph of Lateral
Material Between the Lenses
Magnification 250X
(Mild Acid Treatment)

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